Dear Dr. Fath and colleagues,

On behalf of myself and co-authors, I am pleased to submit a revised version *Dynamic modeling of organic carbon fates in lake ecosystems* as a research article to *Ecological Modelling*. We appreciate constructive comments from two reviewers and associate editor Dr. Santanu Ray and we have revised the manuscript according to their comments. In the revision, we clarified language as requested, provided more detail on the Q10 temperature adjustment and clarified the usefulness of our model in a global change context even though it was not designed as a predictive tool. In addition, we addressed questions the reviewers raised about contributions of groundwater and water column variability in temperature and dissolved oxygen to lake organic carbon budgets in our responses to reviewers. We responded to all reviewer comments in the attached file. We thank you again for handling our manuscript and look forward to hearing from you again.

Sincerely,

Ian M. McCullough, PhD

Postdoctoral Research Associate

Department of Fisheries and Wildlife

Michigan State University

East Lansing, MI 48824